AMENDMENTS TO THE CLAIMS:

This listing of claims will replace all prior versions, and listings, of claims in the application:

1.(original) A control system for a powered vehicle for describing a desired movement of said vehicle, and communicating said movement to a drive system of said vehicle, wherein said powered vehicle comprising a chassis, at least three rolling means mounted on said chassis for engagement with a surface over which said vehicle is to move, wherein said drive system comprising at least two drive units each comprising a first driving means and a second driving means, co-operatively operable to provide both propulsion and steering of said drive unit, wherein said control system comprises a computing means for calculating a desired movement of said vehicle, wherein translation of said vehicle is calculated in the form of a continuous cubic function and rotation of said vehicle is calculated in the form of a linear function, wherein said control system also comprises a communicating means for transmitting said desired movement to said at least two drive units to move said vehicle in accordance with the desired movement.

2.(currently amended) A control system for a powered vehicle according to Claim 1, ~~characterized in that~~wherein said control system also comprises a navigation system for determining an actual position of said vehicle, which actual position is transmitted to said computing means for correcting errors between the actual position and a desired position according to said desired movement of said vehicle.

3.(currently amended) A control system for a powered vehicle according to Claim 1, ~~or Claim 2, characterized in that~~wherein said continuous cubic function is a Beziér function of a third power.

4.(currently amended) A control system for a powered vehicle according to Claim 3, ~~characterized in that~~wherein said Beziér function is expressed in accordance with:

$$x = ap^3 + bp^2 + cp + d$$

$$y = ep^3 + fp^2 + gp + h ,$$

wherein a - h are constants and p is a variable satisfying $0 \leq p \leq 1$.

5.(currently amended) A control system for a powered vehicle according to Claim 4, ~~characterized in that~~wherein said computing means calculates said constants a - h according to the following expressions:

$$a = x_3 - 3x_2 + 3x_1 - x_0$$

$$e = y_3 - 3y_2 + 3y_1 - y_0$$

$$b = 3x_2 - 6x_1 + 3x_0$$

$$f = 3y_2 - 6y_1 + 3y_0$$

$$c = 3x_1 - 3x_0$$

$$g = 3y_1 - 3y_0$$

$d = x_0$

$h = y_0$,

wherein (X_0, y_0) is a start position and (x_3, y_3) is an end position of said movement, and (x_1, y_1) and (x_2, y_2) are control positions of said movement.

6.(currently amended) A control system for a powered vehicle according to ~~anyone of Claims 1-5~~Claim 1, ~~characterized in that~~wherein said movement is made up of at least one segment.

7.(original) A control system for a powered vehicle according to Claim 6, ~~characterized in that~~wherein, if said movement is made up of at least two segments, said control system has to apply to the following rules if said vehicle is to move smoothly from one segment to the next:

- a start position of the following segment must be the same as an end position of the preceding segment;
- a start rotation of the following segment must be the same as an end rotation of the preceding segment;
- a starting path of the following segment must be tangent to an end path of the preceding segment; and
- a starting speed and direction of rotation of the following segment must be the same as an end speed and direction of rotation of the preceding segment.

8.(currently amended) A control system for a powered vehicle according to ~~anyone of Claims 1-7~~Claim 1, ~~**characterized** in that~~wherein said computing means also calculates an instantaneous center of said vehicle.

9.(original) A method of controlling, with the aid of a control system, a movement of a powered vehicle comprising a chassis, a drive system, at least three rolling means mounted on said chassis for engagement with a surface over which said vehicle is to move, wherein said drive system comprises at least two drive units, each comprising a first driving means, and a second driving means, co-operatively operable to provide both propulsion and steering of said drive unit, wherein said method comprises the steps of:

- with a computing means comprised in said control system, to calculate a desired movement of said vehicle;
- by calculating a translation of said vehicle in the form of a continuous cubic function; and
- by calculating a rotation of said vehicle in the form of a linear function; and
- with a communicating means comprised in said control system, to transmit said desired movement to said at least one drive unit to move said vehicle in accordance with said desired movement.

10.(currently amended) A method of controlling, with the aid of a control system, a movement of a powered vehicle according to Claim 9, ~~characterized in that~~wherein said method also comprises the steps of:

- with a navigation system comprised in said control system, to determine an actual position of said vehicle;
- to transmit said actual position to said computing means; and
- to correct errors between said actual position and a desired position according to said desired movement of said vehicle.

11.(currently amended) A method of controlling, with the aid of a control system, a movement of a powered vehicle according to Claim 9 ~~or Claim 10~~, ~~characterized in that~~wherein said continuous cubic function is a Beziér function of a third power.

12.(currently amended) A method of controlling, with the aid of a control system, a movement of a powered vehicle according to Claim 11, ~~characterized in that~~wherein said Beziér function is expressed in accordance with:

$$x = ap^3 + bp^2 + cp + d$$

$$y = ep^3 + fp^2 + gp + h ,$$

wherein a - h are constants, and p is a variable satisfying $0 \leq p \leq 1$.

13.(currently amended) A method of controlling, with the aid of a control system, a movement of a powered vehicle according to Claim 12, ~~characterized in that~~wherein said method also comprises the steps of

- to calculate said constants a - h according to the following expressions:

$$a = x_3 - 3x_2 + 3x_1 - x_0$$

$$e = y_3 - 3y_2 + 3y_1 - y_0$$

$$b = 3x_2 - 6x_1 + 3x_0$$

$$f = 3y_2 - 6y_1 + 3y_0$$

$$c = 3x_1 - 3x_0$$

$$g = 3y_1 - 3y_0$$

$$d = x_0$$

$$h = y_0 ,$$

wherein (X_0, y_0) is a start position and (x_3, y_3) is an end position of said movement, and wherein (x_1, y_1) and (x_2, y_2) are control positions of said movement.

14.(currently amended) A method of controlling, with the aid of a control system, a movement of a powered vehicle according to ~~anyone of Claims 10-13~~Claim 10, ~~characterized in that~~wherein said method also comprises the steps of:

- to calculate an instantaneous center and angular velocity of said vehicle; and

- to calculate speeds and angles of said drive unit.

15.(currently amended) A method of controlling, with the aid of a control system, a movement of a powered vehicle according to ~~anyone of Claims 10-14~~Claim 10, ~~characterized in that~~wherein said method also comprises the steps of:

- if said error will result in abrupt movement of said vehicle, to integrate succeeding corrections; and
- to add a suitable proportion of said corrections for each time slice.

16.(original) At least one computer program product (102_1, ..., 102_n) directly loadable into the internal memory of at least one digital computer (100_1, ..., 100_n), comprising software code portions for performing the steps of Claim 9 when said at least one product (102_1, ..., 102_n) is/are run on said at least one computer (100_1, ..., 100_n).